Determination of Perfluorinated Surfactant in Water by Liquid Chromatography—Negative Ion Electrospray/Ion Trap Mass Spectrometry

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Perfluoronated surfactants are used in a wide variety of products, ranging from firefighting foams to the production of Teflon®. These compounds are persistent in the environment and have toxicological effects on humans and other animals. Perfluoronated surfactants have been detected in surface water and biological matrices. Due to these concerns, the major manufacturers have started to phase out their production. One possible route of exposure to the environment is the water supplies located near production plants. Drinking water was analyzed for specific perfluoronated compounds: perfluorooctanoic acid (PFOA), perfluoroheptanoic acid (PFHpA), and perfluorooctane sulfonate (PFOS) by solid-phase extraction (SPE), coupled with liquid chromatography–negative ion electrospray/ion trap mass spectrometry (LC-NIES/ITMS). Confirmatory analysis was performed by liquid/liquid extraction ^{19}F NMR.